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M E M O R A N D U M

DATE: September 13, 2005

TO: Metropolitan King County Councilmembers

FROM: Cheryle A. Broom, County Auditor

SUBJECT: Transit Capital Planning and Management Performance Audit

Attached for your review is the Transit Capital Planning and Management Performance Audit report. The primary objective of the audit was to assess the extent to which the Department of Transportation Transit Division's practices are consistent with industry best practices for capital planning and management. It also evaluates the appropriateness of the Transit Division's (Transit) performance measures.

The general audit conclusion was that Transit follows many best practices for planning and managing capital assets, but that Transit is inconsistent in following best practices for identifying, quantifying, and analyzing the cost impacts of alternatives for major capital investments. In addition, Transit lacks a facility master plan, which would clarify facility needs and corresponding capital improvement project (CIP) priorities. The report makes recommendations for bringing Transit's practices more in line with best practices, improving its ability to make economically sound decisions, and providing more meaningful information for managers and policy makers.

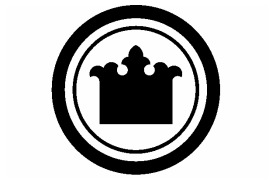
The report also identifies ways in which Transit's use of performance measures could be improved to highlight areas where Transit performs well and to identify areas of performance for further review by management.

Transit expects that acting on this audit's recommendations will lead to better decision-making, more accurate analysis of alternatives that ensure total project costs are correctly and consistently calculated, and easier comparisons between capital expectations and results.

The County Executive agreed with the findings and recommendations of the audit. The Executive Response is included in the appendices of this report.

PERFORMANCE AUDIT

Transit Capital Planning and Management



Presented to
the Metropolitan King County Council
Labor, Operations & Technology Committee
by the
County Auditor's Office

Cheryle A. Broom, King County Auditor
Rob McGowan, Senior Management Auditor
Bob Thomas, Principal Management Auditor

Report No. 2005-03
September 13, 2005

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We conduct audits and studies that identify and recommend ways to improve accountability, performance, and efficiency of county government.

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Abbreviations

CIP	Capital Improvement Program
NTD	National Transit Database
FTA	Federal Transit Administration
NCHRP	National Cooperative Highway Research Project
TFCR	Transit Facilities Condition Report
WSDOT	Washington State Department of Transportation
TCRP	Transit Cooperative Research Program

EXECUTIVE SUMMARY

Introduction

This performance audit of King County Department of Transportation Transit Division's (Transit) capital improvement program (CIP) assesses the extent to which the division's practices are consistent with industry best practices for capital program development. It also evaluates the appropriateness of Transit's performance measures from their business plan and the division's peer review report.

Background

This audit is the third capital performance audit that the King County Auditor's Office has undertaken in the past three years, with the two previous audits having focused on the Wastewater Treatment and Roads Services Divisions. Each of the audits recommends ways King County can better follow best practices in capital planning and management. Employing best practices in capital planning and management helps ensure that agencies consistently make investment decisions that are cost effective and can be clearly articulated to the council and the public.

The findings in our two previous audits raised concerns about the quality of analysis during the capital planning process, and whether the county had processes in place to ensure that it makes the most cost-effective and efficient capital investment decisions. In addition, we found that a lack of written procedures made review of past capital plans and oversight of current plans difficult.

Both of the previous two audits were well received by both the County Executive and the respective agencies, and the formal audit responses concurred with the findings and recommendations of the reports. Agency follow-up to the audit recommendations has also been encouraging. Since the

completion of the audits, the King County Office of Management and Budget developed a countywide policy to standardize assumptions made in economic analysis for capital projects. In addition, the Wastewater Treatment Division developed comprehensive *Guidelines for Economic Analysis* that are now followed for its major capital projects. The Roads Services Division is currently developing similar guidelines.

Conclusions and Recommendations

Overall, we found that Transit applies industry standard best practices in some areas, and in some specific examples of economic analysis of alternative capital investments. However, our analysis, and our case studies of particular capital planning decisions, revealed that some Transit practices fall short of best practices. Bringing these Transit practices more in line with best practices will improve Transit's ability to make economically sound decisions and provide meaningful information for managers and policy makers. The following sections outline this audit's findings, many of which parallel those of the previous two capital audits.

Transit's Compliance with Best Practices in Capital Planning and Management

We found several areas where Transit follows best practices. In particular,

- Transit has adopted a strategic approach to CIP prioritization and asset management.
- Transit has many components of a facility master plan.

However, we found some practices that fall short of best practices. Specifically,

- Transit lacks performance measures to track the success of CIP projects in meeting strategic goals.
- Transit generally does not have policies, procedures, or

guidelines governing the use of economic analysis of proposed capital projects. Instead, Transit's analyses are applied on an ad hoc basis, sometimes relying primarily upon professional judgment.

- Transit is inconsistent in following best practices for identifying, quantifying, and analyzing the cost impacts of alternatives for major capital investments.
- Transit lacks a facility master plan to clarify facility needs and priorities.
- Transit does not communicate a clear, consistent approach to asset management.

Over the course of this audit, Transit acknowledged the need to have guidelines for analysis that are consistently applied to the capital program. In a June 2005 letter, Transit committed to developing such guidelines to ensure the division is making cost-effective capital investments.[1] According to the letter, Transit expects that acting on this audit's recommendations will lead to better decision-making, accurate analysis of alternatives that ensure total project costs are correctly and consistently calculated, and easier comparisons between capital expectations and results.

Recommendation 1: The Transit Division should develop performance measures and targets that reflect the efficiency and effectiveness in meeting the goal of planning and constructing reliable, safe, and convenient transportation services.

Recommendation 2: The Transit Division should develop guidelines and models for conducting economic analysis of capital projects and consistently follow those guidelines.

[1] This letter is included in Appendix 1.

Recommendation 3: The Transit Division should develop a comprehensive facility master plan and designate a schedule for periodically updating the plan.

Recommendation 4: Transit should consider using the state-mandated Asset Management Plan to document and communicate its asset management approach both internally and externally.

Performance Measurement

Performance measures provide a way for an agency to track its progress in meeting strategic goals and objectives. Transit collects, tracks, and reports a wealth of performance data that provides meaningful information for both decision-makers and the public. However, Transit's business plans contain several performance measures that are duplicative or too detailed for the business plan's external audience. In addition, some of the performance measures do not correspond to goals or objectives, and two of Transit's three strategic goals do not have corresponding performance measures.

Recommendation 5: Transit should enhance its collecting and reporting of performance measures by

- reducing the measures included in its business plan to those that are key indicators of its performance.
- ensuring that its strategic goals focus on outcomes, rather than processes.
- developing objectives that relate to the performance measures of revenue recovery and accurate forecasting.
- developing performance measures to track how efficiently and effectively Transit pursues its goals of being an active regional partner and being an outstanding place to work.

Peer Review

Transit periodically compares its performance to peer agencies. Based on its most recent peer report data, which we broke down to separate buses from Trolleys,[2] Transit is shown to be one of the more efficient agencies, in the top third of 12 peer agencies in terms of providing services with the least amount of labor hours. However, Transit is less efficient in terms of operating cost per mile and hours of operation. To understand the reasons for this disparity, and recognizing that the effect of local economies should be taken into account, we divided labor and non-labor costs, and indexed all of the other agencies' labor costs to King County Transit's labor costs by comparing average wages for the regions.

When only labor costs are considered, and are adjusted by regional wage rates, King County Transit remains among the most efficient agencies, not dissimilar to its ranking in terms of labor productivity. However, Transit's non-labor costs are relatively high, which lowers its ranking on non-labor efficiency measures, even though non-labor costs generally contribute less than 20 percent of total operations and maintenance costs. This analysis helps illustrate the potential value of peer review tracking and how information from it may merit further examination by management.

Reporting differences among agencies may also influence comparisons. In cases where such differences are known, one option is to limit the comparison to those agencies that appear to be reporting in a consistent manner.

[2] In Transit's latest report, motor buses and trolley buses are combined when reporting information for peer agencies. However, only two of the peer agencies have trolley fleets (King County and San Francisco), and combining bus and trolley information in some cases skews the results for the comparisons.

Recommendation 6: Transit should enhance the efficiency measures used in its peer review report by breaking down costs into labor and non-labor costs and by adjusting labor costs to reflect regional differences in average wages.

Recommendation 7: Transit should include peer comparison information for buses only, in addition to its current practice of providing information that combines buses and trolleys.

1 INTRODUCTION

This chapter provides a background for the audit and an overview of the Transit Division and its CIP.

Audit Background

Transit's Capital Planning and Management Practices Are Compared to Best Practices

This performance audit of King County Transit's capital improvement program (CIP) assesses the extent to which the division's practices are consistent with industry best practices for capital program development. It also evaluates the appropriateness of Transit's performance measures from their business plan and the division's peer review report.

This audit is the third in a series of capital performance audits that the King County Auditor's Office has undertaken in the past three years. Each of the audits presents established best practices in development of CIPs, current King County agency practices, where gaps between best practices and current practices exist, and ways to close those gaps. All three audits have found similar shortcomings in conformance with key capital planning best practices. Relevant findings from the prior two audits are presented below.

Wastewater Treatment Division (WTD), September 2003

- Analytical approaches to evaluating project costs are inconsistent and in some instances flawed.
- King County does not have a policy for determining the time value of money in economic analyses.
- Guidelines for conducting economic/lifecycle cost analysis are incomplete.

Roads Services Division (RSD), September 2004

- The division's approach to conducting economic analysis of potential projects is inconsistent.
- Important analytic assumptions can be omitted or left to the discretion of private consultants that conduct analysis on behalf of the county.
- RSD has not documented the prioritization process for several components of the CIP.

Previous Audits Questioned Whether the County Could Ensure that Cost-Effective Capital Investment Decisions Were Being Made

Our findings in these two previous audits raised concerns about the quality of analysis during the capital planning process, and whether the county had processes in place to ensure it makes the most cost-effective and efficient capital investment decisions. In addition, gaps in procedures and guidelines made it difficult to review past capital plans and oversee current plans.

Response to Previous Capital Audits

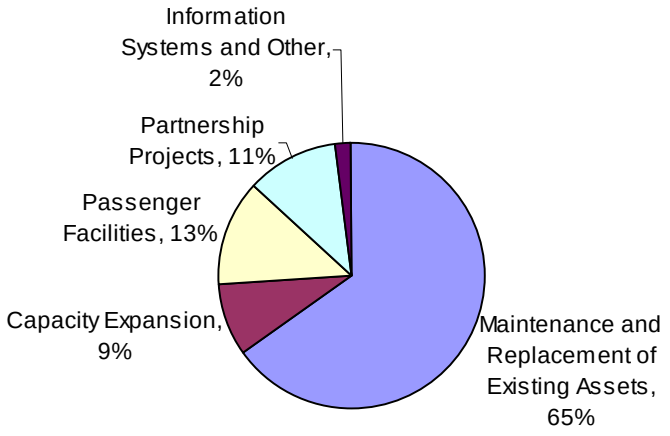
Both previous audits were well received by both the County Executive and the respective agencies, and the formal audit responses concurred with the findings and recommendations of the reports. The executive noted in response to the 2003 audit that addressing the identified issues "will improve accountability and save money in the long run."

Information About the Transit Division

The Transit Division of the King County Department of Transportation (Transit) operates the county's public transportation fleet of trolleys, buses, streetcars, and paratransit vans. It also manages a vanpool program and contracts with Sound Transit to provide bus service for certain Seattle-area transportation corridors.

The Transit CIP is a six-year program for replacing Transit infrastructure and building new infrastructure to support new transit services called for in the transit development plan. The 2005-2010 CIP appropriations are $316.7 million. Exhibit A shows a breakdown by category of this funding.

EXHIBIT A
Breakdown of 2005-2010 CIP Spending by Major Category



SOURCE: Transit 2005 CIP.

Asset maintenance and replacement is the largest funding area for the CIP, followed distantly by passenger facilities and partnerships.

The CIP has three major funding sources:

- Project-specific capital grants.
- Debt financing for long-lived facilities.
- Sales tax.

Scope and Objectives

This audit includes a review of best practices in capital planning and management, including economic analysis, project prioritization, asset management, and facility master planning. We reviewed Transit's current practices and identified areas

where Transit can improve in order to better conform to best practices. We analyzed Transit's use of performance information and determined whether current performance measures are appropriate for management and policy oversight. We evaluated Transit's Peer Agency Review report and determined how the report can be used more effectively.

Scope of Work Related to Internal Controls

We assessed internal controls relevant to the audit objectives. This included a review of Transit's written procedures for prioritizing capital projects and analyzing capital project alternatives as well as an evaluation of Transit's business plan performance measures.

2 TRANSIT CAPITAL PLANNING AND MANAGEMENT

Chapter Summary

This chapter describes how Transit's capital planning and management practices compare to industry best practices. The chapter also provides recommendations to close gaps between current Transit practices and best practices, in order to ensure cost-effective decision-making and promote greater accountability for the division's capital program.

Summary of Findings

Transit Follows Many Capital Planning Best Practices, but Has Room for Improvement

We found several areas where Transit follows best practices. Particularly, Transit has adopted a strategic approach to CIP prioritization and has many components of a facility master plan. However, Transit lacks performance measures to track the success of CIP projects in meeting strategic goals. Also, our case studies of actual Transit capital decisions revealed that Transit generally does not have policies, procedures, or guidelines governing the use of economic analysis of proposed capital projects. In addition, Transit is inconsistent in following best practices for identifying, quantifying, and analyzing the cost impacts of alternatives for major capital investments. Finally, Transit lacks a comprehensive and up-to-date facility master plan.

Summary of Recommendations

This chapter presents four recommendations to improve Transit's capital planning and management practices. In order to improve the consistency and reliability of economic analysis of capital projects, Transit should develop and follow guidelines and models for such analyses. To better communicate its strategic approach to asset management, Transit should update the state-

required Asset Management Plan with comprehensive information about Transit's system. Transit should also develop performance measures and targets to ensure that the capital program meets the division's strategic goal of constructing reliable, safe, and convenient transportation services. Last, Transit should develop a comprehensive facility master plan to guide the CIP.

Transit Has Committed to Developing Guidelines for Analyzing Capital Investments

Over the course of this audit, Transit acknowledged the need to have guidelines for analysis that are consistently applied to the capital program. In a June 2005 letter, Transit committed to developing such guidelines to ensure the division is making cost-effective capital investments.[3] According to the letter, Transit expects that acting on this audit's recommendations will lead to better decision-making, more accurate analysis of alternatives that ensure total project costs are correctly and consistently calculated, and easier comparisons between capital expectations and results.

TRANSIT COMPLIANCE WITH BEST PRACTICES IN CIP DEVELOPMENT

The following table summarizes Transit's compliance with capital program development best practices. The practices are discussed in more detail below.

[3] This letter is included in Appendix 1.

EXHIBIT B

Transit Compliance with Best Practices in CIP Development

Best Practices	Transit CIP Practices
A policy framework guides CIP development	Transit employs a policy framework that helps guide CIP development. However, Transit's current CIP performance measure is not adequate for tracking progress in attaining the Transit goal to "plan, construct, and operate reliable, safe, and convenient transportation services."
The CIP is supported by a strong approach to economic analysis	Transit lacks guidelines for economic analysis and is inconsistent in identifying, quantifying, and analyzing the cost impacts of alternatives for major capital investments.
A comprehensive facility master plan provides guidance for capital projects	Transit has many components of a facility master plan, including goals and strategies, standards, and a facility inventory. However, Transit does not have a comprehensive, up-to-date plan.
The CIP communicates underlying policy and processes	Transit communicates some of its underlying policies and processes for the CIP, particularly the division's prioritization processes. However, Transit does not have a clear and consistent approach to communicating its asset management orientation for the CIP.

SOURCE: King County Auditor's Office (KCAO) best practices research.

Best Practice 1: A policy framework guides CIP development.

A Policy Framework Includes Goals, Objectives, Performance Measures, and Performance Targets

A policy framework consists of policy goals, objectives, and performance measures and targets. As the National Cooperative Highway Research Project's (NCHRP's) *Transportation Asset Management Guide* defines them:

Goals are statements that define the basic aim of a policy. Program goals link the organization's mission to the capital plan's desired outcomes. These goals should be expressed in a clear statement in the introduction to the CIP. An example of a transit policy goal is "promoting better mobility."

Objectives are specific aspects of goals to be attained. For example, one objective for promoting better mobility may be to increase ridership on particular bus routes.

Performance measures are observable, quantifiable measures that align with objectives. They provide the way to track progress toward meeting the objectives. For example, metrics of passengers per mile could be used to measure increased ridership on a particular bus route.

Performance targets are specific values of performance measures that provide the level expected to be attained, usually within a specified time period. They provide the baseline against which actual performance data will be compared. For example, the performance target for increased ridership may be a specific number or percentage increase in passengers per mile on particular bus routes.

Performance Measurement Systems Help in Decision-Making and Communicating Results

A systematic connection between goals, objectives, and performance measures and targets is critical to ensuring that the department's effort is focused on achieving goals and fulfilling its mission. The performance measurement system should serve as a tool for decision-making and communicating departmentwide performance results.

While Transit's policy goals and objectives guide CIP development, Transit does not have adequate performance measures for the capital program. Transit's 2004-2005 business plan includes one capital-related performance measure: Transit CIP Accomplishment Rate. The accomplishment rate is the annual actual cash expense for the capital projects compared to planned cash flow. According to Transit, the measure reflects capital expenses for projects supporting all Transit's core businesses.

Transit's CIP Performance Measure Does Not Track How Much Has Been Built and Could Mask Inefficiencies

While the accomplishment rate is observable and quantifiable, it does not align with objectives or provide a way to track progress in meeting any objective. Accomplishment rate does not specifically describe progress toward building safe and reliable transit service, it does not track how much Transit actually built or bought, and it could mask inefficiencies. Efficiency and effectiveness measures should be used in order to demonstrate whether projects are delivered on time and within budget. Our previous capital program performance audits provide examples of such performance measures, which include percentage of projects completed on time, percentage of projects within budget, and success of the projects in achieving preset goals related to reliability, safety, and mobility (e.g., ability to meet target on-time performance, accident rate reduction, and ridership).

RECOMMENDATION 1

The Transit Division should develop performance measures and targets that reflect the efficiency and effectiveness in meeting the goal of planning and constructing reliable, safe, and convenient transportation services.

Best Practice 2: The CIP is supported by a strong approach to economic analysis.

The CIP Should Incorporate Lifecycle Cost Analysis

Asset management, which is "a systematic process of maintaining, upgrading, and operating physical assets cost effectively,"[4] lays a foundation for a strong CIP. Agencies involved in an asset management program integrate analytical tools in the evaluation of projects to evaluate trade-offs between alternative investment and maintenance activities. The US Department of Transportation's *Asset Management Primer*

[4] *Asset Management Primer.* USDOT, Federal Highway Administration, Office of Asset Management. December 1999, p. 7.

emphasizes the importance of analytical tools in promoting asset management:

> "The analytical procedures consider initial and discounted future agency, user and other costs (such as external costs) over the life of each alternative investment option. They attempt to identify the option that will achieve established performance objectives at the lowest long-term cost, or provide maximum benefit for a given investment/funding level."[5]

In a review of four case studies of major Transit CIP decisions, we found that Transit did not apply the appropriate analytical tools when evaluating the costs of proposed projects.

Transit Did Not Analyze Operating Cost Differences or Account for the Time Value of Money

In one case study, we reviewed Transit's decision to remanufacture the electrical propulsion systems of its aging trolley fleet and to reinstall them into new bus shells. While Transit followed best practices by identifying and reviewing alternatives to replacing its aging trolleys, Transit's review of alternatives had several shortcomings. In particular, Transit did not consider potential operating cost differences among the alternatives, nor did Transit apply the standard practice of discounting cash flows to account for the time value of money.

On this project, our analysis confirmed Transit's ultimate decision to remanufacture the trolleys was warranted, and, based on the cost information provided by Transit, we estimate this decision is resulting in net present value savings of about $11.7 million in 2005 dollars. However, while Transit's limited analysis pointed in the right direction for this project, the same approach taken on other projects could produce a situation where the conclusions would point the wrong direction. Completing a more thorough lifecycle cost analysis is a best practice, is not burdensome to

[5] Ibid, p. 25.

perform, provides better information, and allows decision-makers to make their decisions with more confidence.

Transit Has No Guidelines to Ensure That Analysis Is Sound and Consistently Applied

We also found that Transit does not have policies, procedures, or guidelines that would help ensure economic analyses are sound and consistently applied. Instead, Transit's analyses are applied on an ad hoc basis, sometimes relying primarily upon professional judgment.

In another case study, we reviewed Transit's decision to extend the lives of Gillig diesel bus fleet from 12 years to 14 plus years, which involved deferring expenditures of $19 and $24 million in 2007 and 2008, respectively, to 2010 and 2011. The narrative in the 2004 CIP characterized this as a "good business decision." However, we learned that the decision to delay the replacement of the buses was based on professional judgment instead of a specific analysis, and that the decision was not final.

We asked Transit for examples of replacement analyses, and for written policies, procedures or guidelines regarding the timing of replacement decisions. Transit informed us that there were none, and did not have any specific examples of analysis for us to review.[6]

As an additional illustration, we asked Transit to provide all economic analyses related to Transit's purchase of hybrid buses to replace the Breda dual-mode fleet that was originally put in service to operate in the Downtown Seattle Transit Tunnel. According to the information we were provided, the cost of the hybrids was approximately $152 million, and the additional cost to regional taxpayers of retrofitting the tunnel for use of the hybrids in conjunction with rail is $43 million.

[6] The one exception to this general finding involves non-revenue vehicles. In this case, Transit does have procedures and criteria for when such vehicles are replaced, and employs a model that assists in making these decisions. Our review of the model found, however, that it does not take into account the time value of money, nor does it include all the costs that should be considered in such decisions.

Transit's response to our enquiries was that the cost-benefit comparison attempted was limited to the consideration of replacing the entire Breda fleet either with 60-foot hybrid buses or a Breda-like, dual mode alternative. Transit's analysis consisted of noting that the 60-foot hybrids were less expensive to purchase than a Breda-like alternative, and of assuming that the hybrids' annual maintenance would not be any more costly, and that they would have the same useful life.

Transit provided written, narrative explanations of why other alternatives were deemed undesirable and not pursued. Transit has also acknowledged, however, that there was no systematic evaluation or quantification of the cost and benefits of more than one alternative – something that might demonstrate that Transit's preferred alternative was also the most cost-effective. The absence of a systematic evaluation, however, means that Transit has not verified that this was a sound CIP decision.

Providing The Council With Alternatives Should Enhance The Decision Making Process

The absence of policies, procedures, and guidelines for economic analysis, and for applying best practices in such analyses, makes it difficult for Transit to be held accountable for its decisions and for the County Council to provide effective oversight. Alternately, if Transit provided the Council with its analysis of a thorough array of alternatives, it could enrich the Council's deliberations and support its decision making process.

RECOMMENDATION 2

The Transit Division should develop guidelines and models for conducting economic analysis of capital projects and consistently follow those guidelines.

Best Practice 3: A comprehensive facility master plan provides guidance for capital projects.

Facility master planning is the practice of examining the current and projected facility needs of an organization and the capacity and condition of existing facilities in order to determine the best facility investments in the future. The product of the facility master planning process is a report that plans facility development for the long range – usually 10 to 15 years.

Facility Master Planning Emphasizes Strategic Goals for Capital Over the Long Term

There are important distinctions between capital planning and facility master planning, but most important is that a facility master plan is a longer-term document that has a stronger emphasis on strategic goals and less emphasis on project particulars (such as scope, schedule, and budget). According to a recent report on best practices in facility master planning,

> "Master facility planning lays the foundation of a well managed capital program. A master facility plan is distinguished from a capital plan by how comprehensive it is in linking program to facilities, the duration of the plan and the detail associated with the scope of work. A master plan covers a 10- to 15-year timeframe, while a capital plan typically covers something closer to a five-year period. With regard to detail, the master plan provides less certainty about scope, cost, and schedule, but more detail on goals and objectives, and criteria for setting priorities and making decisions."[7]

A facility master plan supports the CIP by articulating the relationship between the department's strategic goals and its physical plant. A facility master plan also helps to clarify facility needs and priorities for CIP investments by providing

[7] *Program Coordination and Master Facilities Planning Best Practices Project: Task 1 Report.* 21st Century School Fund. August 26, 2004.

comprehensive information on current facilities, their condition, and building standards to which the department adheres. Finally, a facility master plan identifies a rough level of investment needed to satisfy building needs, compared to current funding levels.

Transit Lacks a Facility Master Plan, but Has Some Components of a Plan

Transit does not have a facility master plan. However, the Transit Facilities Condition Report (TFCR), which is prepared by the Design and Construction Section of Transit, includes many of the components necessary to create a facility master plan. The list below describes key components of a facility master plan, and identifies areas where existing parts of the TFCR could be used in creating a facility master plan.

- **Goals and Strategies**. Facility master planning goals provide policy direction for the agency's physical plant, while strategies provide ways for the policies to be implemented. The TCFR includes goals and strategies for facility components, such as roofs, doors, and HVAC systems.
- **Construction Standards**. Construction standards are guidelines for how facilities or facility improvements are required to be built or maintained. Standards ensure that facilities are built and maintained with consistency across the agency. The TFCR does not define construction standards for Transit facilities.
- **Facility Inventory and Condition**. A comprehensive inventory of the agency's facilities is crucial to accurately determining the extent and priority of facility improvements. The TFCR includes inventories for many, but not all, facility components. Inventories in the TFCR include information on condition, as well as extensive information on how Transit determines condition.
- **Needs Assessment**. Needs assessment represents the scope and cost of bringing facility conditions up to the

construction standards laid out in the facility master plan. The TFCR does not include a needs assessment.

While the TFCR includes information that would be valuable in creating a facility master plan, it does not replace a facility master plan. The TFCR plans for the timely maintenance and replacement of building systems, but it does not address the question of whether Transit's facilities meet their operational and programmatic needs.

Transit also produces a Transit Base Expansion Plan report. This report uses service projections to determine future bus base facility needs. However, this report focuses solely on bus base capacity, and has not been updated since 2002. While the report can provide valuable information in formulating a facility master plan, it – like the TFCR – does not replace a facility master plan.

RECOMMENDATION 3

The Transit Division should develop a comprehensive facility master plan and designate a schedule for periodically updating the plan.

Best Practice 4: The CIP communicates underlying policy and processes.

Communicating Prioritization Processes and Asset Management Approach Is Important

The CIP represents a large investment of public funds for capital projects that should endure a long time. In order to instill confidence in lawmakers and the public that the CIP represents the right projects to fund and that those projects will be managed to maximize their value, effective communication of the prioritization processes and asset management approach is important. In addition to effective communication, policies and processes should be clearly documented. Documentation formalizes the systems and helps to ensure that it is uniformly applied consistent with the division's policy framework.

Transit's CIP Clearly Communicates Its Prioritization Processes

Transit clearly communicates the major elements of its prioritization approach in the CIP. It explains the process in which projects are selected for inclusion in the capital program as well as the processes and criteria used to prioritize different categories of projects, such as revenue and non-revenue vehicles, facilities and equipment, and computers.

In the area of asset management, Transit's communication is somewhat less clear. The TFCR presents Transit's approach to facilities and equipment asset management. However, the TFCR's mission and goals statement was created in the 1980s, and it was not approved by upper Transit management, nor was it developed in conjunction with the division business planning. Transit officials stated that asset management is the "way they do business," and that they have not felt the need to develop policies and procedures to ensure asset management is important, since managers have always considered asset management the division's highest priority.

State Law Requires an Asset Management Plan

In 2003, the Washington State Legislature passed Senate Bill 5248, which required as a condition of receiving state funding that all transit agencies within the state submit an asset management plan to the Washington State Transportation Commission. This statutorily required document assimilates best practices in asset management. The law requires the plan to include:

- a mission statement (part of a strategic approach),
- a complete inventory of all transportation system assets and a preservation plan based on lowest lifecycle cost methodologies, using an analytic cost model tool (good information and strong analytic capabilities), and
- detailed program narratives and explanations of the asset management approach (clear communication).

Transit's Current Asset Management Plan Does Not Represent Transit's Current Analytical Approach

Washington State Department of Transportation (WSDOT) provides examples and further guidance on how to prepare a mission statement, what information must be included in the inventory, and what should be included in the plan. Transit submitted its first Asset Management Plan according to the requirements of Senate Bill 5248 to WSDOT before the deadline of May 15, 2005. The Asset Management Plan excerpted strategic information from the TFCR, and mission statements were created for other services in order to complete the document. However, in lieu of presenting cost models and analytical approaches that Transit currently uses, Transit followed WSDOT's advice and used the state's cost model example to show historical examples of Transit's financial decisions. Transit officials have agreed that the Asset Management Plan may be an appropriate place to document the division's approach to asset management in the future.

RECOMMENDATION 4

The Transit Division should consider using the state-mandated Asset Management Plan to document and communicate its asset management approach both internally and externally.

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3 TRANSIT PERFORMANCE MEASUREMENT AND PEER REVIEW

Chapter Summary

This chapter describes how Transit uses performance measures for its business plan and for a special peer benchmarking report. It offers recommendations to improve the use of performance information, in order to make more strategic management decisions and to provide a clearer picture of the division's performance.

Summary of Findings

Transit's Performance Measures Provide Useful Information for Decision-Makers and the Public

We found that Transit collects and reports a wealth of performance data. The division's business plan includes many of these measures, some of which provide decision-makers and the public with useful information to track how well Transit is performing relative to its goals. However, some of the measures in the business plan are duplicative or too detailed for the business plan's external audience. In addition, some of the performance measures do not correspond to the division's goals or objectives, and two of Transit's three business plan goals do not have corresponding performance measures. We also found that Transit's peer efficiency report could be refined to provide more meaningful information for internal and external audiences.

Summary of Recommendations

We recommend several measures to improve Transit's use of performance measures and peer review. Transit should improve its collecting and reporting of performance measures by removing duplicative performance measures from their business plan and designating performance measures to track its efficiency and effectiveness in two goal areas: being an active regional partner and being an outstanding place to work. The

peer review report should be improved by reflecting regional differences in wages and breaking down costs into labor and non-labor costs. Also, the peer comparison should provide information for buses only, in addition to its current practice of providing information that combines buses and trolleys.

PERFORMANCE MEASUREMENT

Performance Measures Track Progress in Meeting Strategic Goals

Performance measures provide a way for an agency to track its progress in meeting strategic goals and objectives. As part of the annual budget process, the King County Office of Management and Budget requires agencies to identify key strategic goals and performance measures in their business plans. Transit's business plan identifies 18 performance measures across its three strategic goals.[8]

We used two approaches to evaluate Transit's performance measures: the Business Plan Analysis Tool developed by the Countywide Performance Measurement Workgroup, and the Transit Cooperative Research Program's *Guidebook for Developing a Transit Performance-Measurement System*. We chose these two approaches to represent the county's perspective in its effort to improve performance measurement and the transit industry perspective on successful transit-specific measures.

The Business Plan Analysis Tool

In July 2003, the King County Auditor's Office contracted with a consultant to assist in further developing the county's performance measurement capabilities.[9] The *Final Report of the Countywide Performance Measurement Program*, which was

[8] Chapter 2 discusses the major components of a policy framework (including goals, objectives, performance measures, and performance targets) in more detail.
[9] Appendix 2 shows how the county envisions the relationship among goals, strategies, performance measures, and performance targets.

delivered in August 2004, provides a useful tool for evaluating county business plans, including the utility of agency performance measures. For each goal, the tool asks:

- Does the goal have both efficiency and effectiveness measures to present a balanced view?
- Are there too many or too few measures?

For each performance measure, the tool asks:

- Does the measure accurately describe progress toward a goal or objective?

TCRP Report 88: A Guidebook for Developing a Transit Performance-Measurement System

The Transit Cooperative Research Program Provides Guidance on Over 400 Performance Measures for Transit Operations

The Transit Cooperative Research Program (TCRP) is a federally funded program that provides research and technical support to transit service providers in the United States. The scope of TCRP's research includes planning, equipment, facilities, operations, maintenance, and administrative practices. TCRP wrote *A Guidebook for Developing a Transit Performance-Measurement System* in order to help transit agencies identify the most appropriate performance measures and indicators. The report provides a detailed explanation of over 400 transit-related performance measures. For each performance measure, TCRP highlights the strengths and weaknesses of the measure. Our analysis below incorporates advice from the guidebook.

In this section, we apply both the countywide Business Plan Analysis Tool and, where appropriate, the *Guidebook for Developing a Transit Performance-Measurement System* to analyze Transit's performance measures reported in the division's business plan. At the end of this section, we provide a recommendation for improving Transit's use of performance measures.

Goal 1 Performance Measures

Transit's first business plan goal involves being responsive to customer needs by providing safe, reliable, and mobile public transportation:

> Goal 1: Provide the transportation products and services needed by citizens, businesses, and communities. Plan, construct and operate reliable, safe and convenient transportation services that provide alternatives to driving alone and are responsive to the needs of citizens, businesses and communities.

Goal 1 is outcome-oriented, and Transit has selected performance measures that accurately assess whether those outcomes are achieved. Specifically, Transit has designated performance measures that track customer responsiveness, passenger safety, transit reliability, and ridership. Transit has also selected several efficiency measures to balance its effectiveness measures. Appendix 3 provides a more detailed analysis of the performance measures Transit has selected for Goal 1.

Business Plan Performance Measures Should Be Straightforward; More Complex Performance Measures Can Be Used for Internal Management Purposes

Transit reports too many performance measures for Goal 1. Agencies should avoid using too many performance measures so that consumers of the data can focus on the few measures that track significant outcomes. Performance measures vary in complexity, and different performance measures should be used depending on the intended audience and purpose. Measures for the business plan should be the most straightforward measures that convey how the agency is performing in accomplishing its stated objective. However, more detailed performance measures may be useful for specific internal management purposes. For example, to track reliability, Transit uses two performance measures: on-time performance and miles between trouble calls. While on-time performance is a straightforward, industry

standard measure that can be conveyed to a general audience, miles between trouble calls is more useful at a managerial level, where experts better understand what the data means. Similarly, Transit uses two performance measures – one general and one more detailed – for mobility and customer responsiveness.

Transit's CIP Performance Measure Does Not Track How Much Has Been Built and Could Mask Inefficiencies

Accomplishment rate, Transit's performance measure for the capital program, measures the percentage of the capital budget spent on an annual basis. This measure may not accurately describe what was actually built or bought (since the budget could be spent on items that do not fulfill Transit's strategic goals), and it may mask inefficiencies (since the majority of the budget could be spent on a few projects). Chapter 2 discusses this issue in more detail and provides examples of measures Transit should consider using to measure whether the capital plan accomplishes its intended goals.

Goal 2 Performance Measures

Goal 2 involves how well Transit performs in developing regional partnerships to further its transportation mission:

> Goal 2: Be an active regional partner by working with others to develop and carry out transportation plans and services that support mobility, accessibility, land use and growth management.

Performance Measures for Regional Partnerships Focus on Processes Rather Than Outcomes

Goal 2 is process-oriented, rather than outcome-oriented. While the intended outcome of the goal aims to fulfill the Transit mission of improving mobility, accessibility, and growth management, the goal focuses on the process of partnering with other regional entities.

Goal 2 has two performance measures: percent revenue recovery for special events and percent variation from forecasted cost/hour for contracted bus service. While both of these

measures are important in evaluating the success of Transit's partnership efforts, they measure objectives related to revenue recovery and accurate forecasting that are not explicitly included in Transit's Goal 2. Clearly linking performance measures to goals and objectives is important in ensuring that the agency is focused on achieving successful outcomes. Appendix 3 provides a more detailed analysis of the performance measures Transit has selected for Goal 2.

Transit has noted that historically, partnering has been a difficult area to define measures that can be tracked over time. However, some research exists that points to performance measures for successful partnering, including partnership milestones achieved, ridership on partnership routes, proportion of service delivered through partnerships, partner satisfaction, and others.

Goal 3 Performance Measures

Goal 3 is aimed at improving Transit's workplace environment:

> Goal 3: Be an outstanding place to work. Provide an effective, customer-oriented work force that reflects the diversity of the community.

Transit Has No Performance Measures for Its Workplace Environment Goal

Goal 3 currently has no performance measures. However, TCRP's guidebook suggests some measures in this area that Transit might consider, including staff turnover rate, number of employee suggestions implemented, number/percent of employees trained, employee satisfaction, staff days lost to injury, and others. Transit has agreed to consult the guidebook in developing performance measures for this goal.

RECOMMENDATION 5

The Transit Division should enhance its collecting and reporting of performance measures by

- reducing the measures included in its business plan to those that are key indicators of its performance.

- ensuring that its strategic goals focus on outcomes, rather than processes.
- developing objectives that relate to the performance measures of revenue recovery and accurate forecasting.
- developing performance measures to track how efficiently and effectively Transit pursues its goals of being an active regional partner and being an outstanding place to work.

PEER REVIEW

In response to a recommendation from a 1999 performance audit, Transit began comparing its performance to peer agencies using data included in the National Transit Database (NTD) compiled by the Federal Transit Administration (FTA). Such comparisons are often helpful to managers in identifying and prioritizing ways to improve operations.

Factors Outside Transit's Control Can Influence Its Performance

Transit's most recent report compared Transit to its peers in terms of efficiency (using the boardings per platform hour and operating cost per platform hour) and in terms of mobility (using boardings per capita). Transit has highlighted a variety of factors that may influence an agency's performance as reflected in information from NTD, including the local economy's influence on service costs, unique characteristics of the service area, such as size, topography, population density and development patterns, and transit agency governance.

Our analysis acknowledges Transit's concerns and focuses on efficiency measures, which are least susceptible to influence by the regional characteristics mentioned by Transit. One objective in looking at these measures was to learn if Transit can extract information from the comparisons that can be used for management purposes.

In order to account for the likelihood that local economies and regional costs of living differences affect the efficiency comparisons, Transit has devised a way of comparing efficiency among agencies without regard to costs. It has done this by looking at number of work hours expended to provide service, rather than the cost of the hours. The comparative results from taking this approach, as applied to data for each agency's bus operations, are shown in the following exhibit.

EXHIBIT C

Efficiency Measures Based on Total Work Hours for Buses

Agency	Vehicle Miles per Work Hour	Rank	Revenue Miles per Work Hour	Rank	Vehicle Hours per Work Hour	Rank	Revenue Hours per Work Hour	Rank
King County	8.50	2	7.0	3	0.59	3	0.52	4
Baltimore	7.44	7	6.1	6	0.55	5	0.48	6
Cleveland	8.45	3	7.1	2	0.63	2	0.57	2
Dallas	6.32	11	5.4	10	0.45	12	0.41	10
Houston	7.00	8	5.9	8	0.45	11	0.41	9
Milwaukee	7.58	4	6.9	4	0.56	4	0.53	3
Minneapolis	7.54	5	6.0	7	0.55	7	0.48	7
Oakland	6.71	9	5.8	9	0.55	6	0.50	5
Pittsburgh	6.70	10	5.2	11	0.47	10	0.40	11
Portland	8.72	1	7.6	1	0.65	1	0.60	1
San Francisco	4.63	12	4.0	12	0.50	9	0.46	8
St. Louis	7.45	6	6.3	5	0.52	8	0.40	12

Note: Interpretation: Rank of 1 is best.

SOURCE: NTD data for 2003.

These rankings show Transit to be in the top third of 12 peer agencies. What is useful about this approach is that it shows comparative efficiency in terms of productivity. What it does not show, however, is relative efficiency in terms of cost.

Recognizing that the effect of local economies should be taken into account, but still desiring to look at efficiency in terms of cost, we took the original NTD information and adjusted it for cost of living and wages. We used Bureau of Labor Statistics' county wage data, indexing all of the other agencies' labor costs to King County Transit's labor costs by comparing average wages. We

further broke down the information in Exhibit C by dividing it between labor costs only and non-labor costs. The results of this effort are shown in the following two tables.

EXHIBIT D

Labor Costs Adjusted for Regional Wage Differences (Buses Only)

Agency	Labor Cost per Vehicle Mile	Rank	Labor Cost per Revenue Mile	Rank	Labor Cost per Vehicle Hour	Rank	Labor Cost per Revenue Hour	Rank
King County	$5.87	3	$7.14	3	$84.80	4	$95.24	3
Baltimore	$6.91	8	$8.48	9	$92.81	8	$106.35	9
Cleveland	$7.62	10	$9.09	11	$102.52	11	$113.41	12
Dallas	$7.27	9	$8.47	8	$102.75	12	$112.90	11
Houston	$6.44	5	$7.68	5	$99.12	10	$108.85	10
Milwaukee	$6.87	7	$7.58	4	$92.33	7	$97.90	5
Minneapolis	$5.56	2	$6.96	2	$76.89	2	$87.23	2
Oakland	$7.76	11	$9.03	10	$95.02	9	$103.45	8
Pittsburgh	$6.01	4	$7.79	6	$86.52	5	$101.32	7
Portland	$6.75	6	$7.80	7	$90.17	6	$98.44	6
San Francisco	$8.56	12	$9.89	12	$79.62	3	$85.79	1
St. Louis	$5.10	1	$6.07	1	$72.65	1	$95.74	4

Notes: Interpretation: Rank of 1 is best

SOURCE: NTD data for 2003 and Bureau of Labor and Statistics, County Employment and Wages, 2nd Qtr. 2004.

EXHIBIT E

Unadjusted Non-Labor Costs (Buses Only)

Agency	Non-Labor Cost per Vehicle Mile	Rank	Non-Labor Cost per Revenue Mile	Rank	Non-Labor Cost per Vehicle Hour	Rank	Non-Labor Cost per Revenue Hour	Rank
King County	$0.99	8	$1.21	8	$14.34	9	$16.10	9
Baltimore	$0.94	7	$1.15	7	$12.62	7	$14.47	7
Cleveland	$1.16	12	$1.39	12	$15.67	12	$17.33	11
Dallas	$1.08	10	$1.26	10	$15.24	11	$16.74	10
Houston	-$0.89	1	-$1.06	1	-$13.64	1	-$14.98	1
Milwaukee	$0.51	2	$0.57	2	$6.92	3	$7.33	3
Minneapolis	$0.80	4	$0.99	5	$10.99	5	$12.46	5
Oakland	$1.10	11	$1.28	11	$13.42	8	$14.61	8
Pittsburgh	$0.84	6	$1.09	6	$12.06	6	$14.12	6
Portland	$0.80	5	$0.92	4	$10.62	4	$11.60	4
San Francisco	$0.71	3	$0.83	3	$6.65	2	$7.17	2
St. Louis	$1.03	9	$1.23	9	$14.73	10	$19.42	12

Notes: Interpretation: Rank of 1 is best.

SOURCE: NTD data for 2003.

Transit Has Relatively High Non-Labor Costs

When only labor costs are considered and are adjusted by regional wage rates, King County Transit remains in the upper third of the range of peers, not dissimilar to its ranking in terms of labor productivity (Exhibit C, above). However, Transit's non-labor costs are relatively high, which lowers its ranking on non-labor efficiency measures, even though non-labor costs generally contribute less than 20 percent of total operations and maintenance costs.

The value of this kind of analysis is that it can point to areas that are important for peer review tracking and that merit further examination by management. Some of the reasons for relatively high non-labor costs may have to do with operational practices that can be changed, or they may also have to do with deliberate policy decisions whose consequences and costs can be measured. For example, one factor Transit has suggested that contributes to relatively higher non-labor costs is that Transit's buses use ultra-low sulphur diesel fuel, which is better for the environment, but which can be more expensive if there is not a strong market for the fuel.

Differences in Reporting Can Influence Peer Comparisons

Reporting differences among agencies may also influence comparisons. In cases where such differences are known, one option is to limit the comparison to those agencies that appear to be reporting in a consistent manner. For example, in Exhibit E, Houston shows a negative non-labor cost due to the reporting of a large expense transfer (a negative number) that falls into the non-labor category. Since non-labor costs are relatively minor (generally less than 20% of total operating costs), the effect on the overall comparison of any reporting differences may not be crucial, but comparisons still must be made with care. In this case, eliminating Houston from the comparison would result in King County being ranked seven or eight out of eleven, rather than eight or nine out of twelve.

RECOMMENDATION 6 The Transit Division should enhance the efficiency measures used in its peer review report by breaking down costs into labor and non-labor costs and by adjusting labor costs to reflect regional differences in average wages.

In Transit's latest report, motor buses and trolley buses are combined when reporting information for peer agencies. However, only two of the peer agencies have trolley fleets (King County and San Francisco), and combining bus and trolley information skews the results for some of the comparisons.

RECOMMENDATION 7 The Transit Division should include peer comparison information for buses only, in addition to its current practice of providing information that combines buses and trolleys.

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APPENDICES

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APPENDIX 1

June 2005 Letter from the Transit Division

King County
Metro Transit Division
Department of Transportation
King Street Center
M. S. KSC-TR-0415,
201 South Jackson Street
Seattle, WA 98104-3856

June 21, 2005

Rob McGowan, Senior Management Auditor
King County County – Auditor Office
King County Courthouse
516 3rd Ave, Room W1020
Seattle, WA 98104

The purpose of this letter is to outline the Transit Division's intent to develop and implement policies, practices and procedures to ensure consistent and complete economic analysis for capital project activities.

The Transit Division has utilized a variety of economic analyses in the past to evaluate the costs of capital project alternatives. The Transit Division recognizes that it could benefit from developing and applying analytic approaches that ensure a consistent method to developing project costs. The benefits of this approach include better decision-making, ability to accurately compare and contrast alternatives and ensure that total project costs are correctly and consistently calculated and communicated at the time that a project is selected. Analysis of this type will also enable the Transit Division staff to more readily compare actual results with expectations.

To this end, the Transit Division commits to undertake the following steps:

- Inventory current practices for calculating project costs and compare these with industry standards for 'best practices'.

- Develop a standard set of acceptable methods for calculating project costs. These methods will include calculations such as Net Present Value and Life Cycle Costing. Where possible, proven methods already in place at King County or other Transit properties will be used. This would include incorporating the Discount Rate Policy that has been developed by the Office of Management & Budget. Recommendations provided by the King County Auditors as part of the current Transit Capital Program audit will be incorporated in determining appropriate calculation methods.

- Provide documentation and training for project managers to understand the financial calculations and provide direction as to which of the methods is appropriately used.

- Provide training for Transit management to understand and use this project costing information when making decisions internal to and between projects.

In addition, the Transit Division recognizes the need to improve capital program reporting. Transit currently lacks a unified system for capital management and reporting. Transit is in the process of identifying requirements of this system and is committed to the following:

- Finalizing requirements for a capital program management and reporting system and selecting a system that will provide timely and accurate information about capital projects. This capital program management and reporting system needs to be integrated with the existing payroll and financial systems. Transit will work with the Department of Executive Services to incorporate system requirements into the current ABT effort.

We look forward to the receiving the results of your current audit. If you have any questions about this information, please let me know.

Sincerely,

Jill M. Krecklow
Finance & Administrative Services Manager
Transit Division

cc: Kevin Desmond, Transit General Manager
Jim Jacobson, Transit Deputy General Manager
Sid Bender, Capital Projects Supervisor, King County Office of Management & Budget

APPENDIX 2

Strategic Planning Process

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APPENDIX 3

Analysis of Transit Performance Measures

Analysis of Specific Performance Measures for Goal 1	
Performance Measure (Type) and Measure Description	**Analysis**
1. Riders' overall satisfaction with Transit (Effectiveness) Measured annually as part of a survey of approximately 1,200 riders and 1,200 nonriders.	This is a good business plan measure for Goal 1. It tracks Transit's progress toward being responsive to customer needs. Transit should ensure that the survey analyzes customer satisfaction among its business lines (such as bus, vanpool, and transportation services for disabled) and among different rider/nonrider demographics. Different levels of satisfaction may indicate areas that need improvement.
2. Complaints per million boardings (Effectiveness) Measures complaints made to Transit's Customer Assistance Office.	This measure describes progress toward the goal of being responsive to the needs of citizens. However, we recommend that it be removed from the business plan.* Transit's overall customer satisfaction measure (#1 above) is a better performance measure for the business plan. As the Transit Cooperative Research Program (TCRP) notes, complaint- and compliment-based measures are subjective, and are based upon only those riders who make the effort to comment. Their perceptions are not necessarily indicative of the service performance perceptions of all riders. But tracking passenger feedback obtained through a comment process can help Transit obtain useful insights on issues that are important to its customers.
3. Transit bus ridership (Effectiveness) Measured boardings from Automated Passenger Counter surveys taken in each of three annual service periods.	This is a good business plan measure for Goal 1. It tracks progress toward meeting Objective 1 (for buses): Continuously improve our products and services to attract new customers and retain existing ones.
4. Bus boardings per platform mile (Effectiveness) This indicator is a function of ridership (bus boardings) relative to platform miles (revenue service and deadhead, or travel between a base and the beginning or end of a route or between two routes).	This measure describes progress toward meeting Objective 1: Continuously improve our products and services to attract new customers and retain existing ones. However, we recommend that it be removed from the business plan.* Transit's bus ridership measure (#3 above) is a better performance measure for the business plan. As TCRP notes, bus boardings per platform mile are more useful as benchmarks, either in a peer review report, or in conducting a trend analysis for a particular transit agency.

APPENDIX 3 (Continued)

Performance Measure (Type) and Measure Description	Analysis
5. Bus on-time performance (Effectiveness) Bus on-time performance is measured using Automated Vehicle Location equipment. A bus is "on time" when it is between one minute earlier and five minutes later than its scheduled arrival at a time point.	This is a good business plan measure for Goal 1 (for buses). This measure describes progress toward providing reliable transit, as well as Objective 1(a): Maintain and enhance the convenience, reliability and cleanliness of products, services and infrastructure.
6. Miles between trouble calls (Effectiveness) Miles between problems requiring either a supervisor or mechanic's assistance tracks the reliability of coaches in providing service.	This measure describes progress toward providing reliable transit, as well as Objective 1(a): Maintain and enhance the convenience, reliability and cleanliness of products, services and infrastructure. However, we recommend that it be removed from the business plan.* Transit's bus on-time performance measure (#5 above) is a better performance measure for the business plan.
7. Traffic accidents million revenue miles (Effectiveness) Transit tracks the number of traffic accidents in a safety database. This indicator reflects safe driving, driver training effectiveness, weather and traffic density.	This is a good business plan measure for Goal 1. This measure tracks progress toward providing safe transit services.
8. Satisfaction with personal safety while riding the bus during the day (Effectiveness) Customer satisfaction with personal safety while riding the bus during the day is one of the questions in Transit's annual rider/nonrider survey.	This measure also relates to the goal of providing safe transit services as well as Objective 1(b): Enhance the security, comfort and satisfaction of passengers and employees. As with overall customer satisfaction, Transit should ensure that the survey analyzes customer satisfaction among services (e.g., bus, vanpool, and transportation services for disabled) and among different customer demographics.
9. Bus operating cost/platform hour (Efficiency) Bus operating cost/hour reflects the cost of purchased goods and services, the type and quality of service provided and the efficient use of resources.	This is a good business plan measure for Goal 1. This measure tracks progress toward providing efficient bus transit, as well as Objective 2(d): Provide services and products consistent with the Transit Financial Policies to achieve responsible, efficient and equitable use of public funds.

APPENDIX 3 (Continued)

Performance Measure (Type) and Measure Description	Analysis
10. Bus vehicle maintenance cost per mile (Efficiency) Bus vehicle cost and miles exclude fuel and non revenue vehicles. Actual vehicle miles are from the bus dispatch system. Costs are a function of labor rates, fleet age, coach parts and warranty refunds.	This measure relates to the goal of providing efficient transit, as well as Objective 2(d): Provide services and products consistent with the Transit Financial Policies to achieve responsible, efficient and equitable use of public funds. However, we recommend that it be removed from the business plan.* As Transit has pointed out, this measure is heavily influenced by changes in fleet, and is a more useful internal measure since measures for overall cost efficiency are already included. TCRP agrees that this type of measure's most useful application is in helping capital planners better understand the total cost of operating and maintaining particular fleet types.
11. ACCESS ridership (Effectiveness) ACCESS transportation provides van service for people with disabilities in compliance with the Americans with Disabilities Act. Ridership boardings are provided from the ACCESS scheduling database.	This is a good business plan measure for Goal 1. It tracks progress toward meeting Objective 1 (for transportation services for disabled): Continuously improve our products and services to attract new customers and retain existing ones.
12. Transit CIP accomplishment rate This performance measure is the annual, actual cash expense for capital projects compared to planned cash flow.	Transit believes that this performance measure provides useful information in tracking the achievement of Objective 1(c): Implement Six Year Plan service and capital investments and Objective 1(f): Maintain, replace and upgrade facilities, equipment and systems based on anticipated use and customary and reasonable public transportation and engineering practices. However, accomplishment rate is a problematic performance measure. Accomplishment rate may not accurately describe what was actually built or bought (since the budget could be spent on items that do not fulfill Transit's strategic goals), and it may mask inefficiencies (since the majority of the budget could be spent on a few projects). Chapter 2 discusses this issue in more detail, and provides examples of measures Transit should consider using to measure whether the capital plan accomplishes its intended goals.
13. On-time paratransit performance (Effectiveness) This is measured monthly for each service operator and reported as an aggregate.	This is a good business plan measure for Goal 1 (for ACCESS). This measure tracks progress toward providing reliable transit, as well as Objective 1(a): Maintain and enhance the convenience, reliability and cleanliness of products, services and infrastructure.

APPENDIX 3 (Continued)

Performance Measure (Type) and Measure Description	Analysis
14. ACCESS direct operating cost/ride (Efficiency) This indicator is a function of contracted vehicle service hour rates, fuel and facilities expense, schedule and operator productivity, and the volume and type of demand.	This is a good business plan measure for Goal 1. This measure tracks progress toward providing efficient ACCESS transit, as well as Objective 2(d): Provide services and products consistent with the Transit Financial Policies to achieve responsible, efficient and equitable use of public funds.
15. Vanpool ridership (Effectiveness) Measured boardings from driver surveys. Vanpool ridership is almost exclusively related to commute trips. It's a function of the regional economy, reemployment and fares.	This is a good business plan measure for Goal 1. It tracks progress toward meeting Objective 1 (for Vanpool): Continuously improve our products and services to attract new customers and retain existing ones.
16. Vanpool direct operating cost/trip (Efficiency) Direct operating cost includes fuel, tires, insurance and maintenance. Annual costs vary with the age of the fleet.	This is a good business plan measure for Goal 1. This measure tracks progress toward providing efficient vanpool services, as well as Objective 2(d): Provide services and products consistent with the Transit Financial Policies to achieve responsible, efficient and equitable use of public funds.

Analysis of Specific Performance Measures for Goal 2

Performance Measure (Type) and Measure Description	Analysis
1. Percent revenue recovery for special events (Effectiveness) Revenue collected by Transit to offset costs for Transit-provided special event transportation services.	While revenue recovery is a good performance measure to track the success of regional partnerships, Transit does not currently have an objective under Goal 2 that relates to recovering revenue. Transit has noted that this performance measure tracks progress toward achieving Goal 1, Objective 2(a) and (d) – Ensure adequate farebox revenues and pursue other revenue sources to support our mission and provide services and products consistent with the Transit Financial Policies to achieve responsible, efficient and equitable use of public funds.
2. Percent variation from forecasted cost/hour for Sound Transit Express contracted bus service (Effectiveness) Difference between predicted and actual per unit costs for contracted service.	Transit notes that in order to perform well as a contractor, the division needs to provide accurate cost forecasting, enabling Sound Transit to do effective budgeting and planning. However, Transit currently does not have an objective under Goal 2 related to accurate forecasting.

SOURCE: Transit Business Plan, TCRP, and KCAO Analysis.

* As noted in Chapter 3, agencies should avoid using too many performance measures so that consumers of the data can focus on the few measures that track significant outcomes.

LIST OF FINDINGS, RECOMMENDATIONS & IMPLEMENTATION SCHEDULE

Finding: Transit has inadequate performance measures for the CIP. The CIP accomplishment rate does not track progress toward building safe and reliable transit service, nor does it track how much Transit actually built or bought, and it could mask inefficiencies.

Recommendation 1: The Transit Division should develop performance measures and targets that reflect the efficiency and effectiveness in meeting the goal of planning and constructing reliable, safe, and convenient transportation services.

Implementation Date: Fourth quarter of 2006

Estimate of Impact: Establishing measures that accurately track the performance of the CIP in meeting strategic goals will improve Transit's decision-making and communication of CIP outcomes.

Finding: Transit does not have policies, procedures, or guidelines governing the use of economic analysis of proposed capital projects, and Transit is inconsistent in following best practices for identifying, quantifying, and analyzing the cost impacts of alternatives for major capital investments.

Recommendation 2: The Transit Division should develop guidelines and models for conducting economic analysis of capital projects and consistently follow those guidelines.

Implementation Date: Second quarter of 2006

Estimate of Impact: Guidelines and models for economic analysis will help ensure that Transit makes sound economic decisions and provides meaningful information to managers and policymakers.

Finding: Transit lacks a facility master plan.

Recommendation 3: The Transit Division should develop a comprehensive facility master plan and designate a schedule for periodically updating the plan.

Implementation Date: Fourth quarter of 2006

Estimate of Impact: A facility master plan will clarify Transit's facility needs and priorities for CIP investments by providing comprehensive information on current facilities, their condition, building standards to which the department adheres, and the level of investment needed to satisfy building needs, compared to current funding levels.

LIST OF FINDINGS, RECOMMENDATIONS & IMPLEMENTATION SCHEDULE (Continued)

Finding: Transit does not clearly communicate its approach to asset management.

Recommendation 4: Transit should consider using the state-mandated Asset Management Plan to document and communicate its asset management approach both internally and externally.

Implementation Date: Second quarter of 2006

Estimate of Impact: Effective communication of Transit's approach to asset management will help instill confidence in managers, lawmakers, and the public that the substantial investments represented by the CIP are being managed to maximize their value over time.

Finding: Some of the performance measures Transit uses in its business plan are duplicative or too detailed for the business plan's external audience. In addition, some of the performance measures do not correspond to the division's goals or objectives, and two of Transit's three business plan goals do not have corresponding performance measures.

Recommendation 5: Transit should enhance its collecting and reporting of performance measures by

- reducing the measures included in its business plan to those that are key indicators of its performance.
- ensuring that its strategic goals focus on outcomes, rather than processes.
- developing objectives that relate to the performance measures of revenue recovery and accurate forecasting.
- developing performance measures to track how efficiently and effectively Transit pursues its goals of being an active regional partner and being an outstanding place to work.

Implementation Date: Third quarter of 2006

Estimate of Impact: Refining its performance measures will enable Transit to better highlight areas where it is performing well, as well as identify areas of performance that require review and attention.

Finding: Transit's peer review analysis of efficiency shows comparative efficiency in terms of productivity, but does not reflect relative efficiency in terms of cost.

Recommendation 6: Transit should enhance the efficiency measures used in its peer review report by breaking down costs into labor and non-labor costs and by adjusting labor costs to reflect regional differences in average wages.

Implementation Date: Second quarter of 2006

Estimate of Impact: The value of this kind of analysis is that it can point to areas that are important for peer review tracking and that merit further examination by management. Additionally, adjusting for regional differences in labor costs provides a fairer way of comparing efficiency in terms of cost.

LIST OF FINDINGS, RECOMMENDATIONS & IMPLEMENTATION SCHEDULE (Continued)

Finding: Combining information for motor buses and trolley buses in Transit's Peer Review Report skews the results for some of the comparisons, favoring King County by some measures and disfavoring it by others. Of the original twelve peer agencies used for comparisons, only two (King County and San Francisco) operate trolley fleets.

Recommendation 7: Transit should include peer comparison information for buses only, in addition to its current practice of providing information that combines buses and trolleys.

Implementation Date: Second quarter of 2006

Estimate of Impact: Providing information for buses only will allow for a more direct and meaningful comparison of Transit to its peers.

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EXECUTIVE RESPONSE

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AUG 17 2005
KING COUNTY AUDITOR

August 17, 2005

Cheryl A. Broom
King County Auditor
Room 1020
COURTHOUSE

Dear Ms. Broom:

Thank you for the opportunity to respond to your proposed final report – Transit Capital Planning and Management Performance Audit dated August 4, 2005. My staff and I appreciate the collaborative and professional approach taken by the audit staff. We look forward to the discussion of the final audit at the August 23, 2005 meeting of the Labor, Operations and Technology Committee. This letter and the enclosure respond to the findings and recommendations discussed in the proposed final report.

I generally agree with the findings and concur with the recommendations. I appreciate the auditor's acknowledgement that the Transit Division follows several best practices in planning and managing its capital program and that they measure their performance. The Transit Division is currently working with the Office of Management and Budget to define a scope of work for a facility master plan. The Transit Division has also volunteered to participate in the county's ABT process with the goal of implementing Oracle Projects as a tool to use to report information about their capital program that is not readily available today.

The enclosure includes the recommendations contained in the auditor's proposed final report and our responses. If you require additional information or have any further questions, please contact Transit General Manager, Kevin Desmond at 684-1619.

Sincerely,

Ron Sims
King County Executive

Enclosure

cc: Maura Brueger, Deputy Chief of Staff, King County Executive Office
Robert Cowan, Director, Office of Management and Budget
Dave Lawson, Manager, Executive Audit Services
Sheryl Whitney, Assistant County Executive
Harold Taniguchi, Director, Department of Transportation (DOT)
Kevin Desmond, Transit General Manager, Transit Division, DOT
Jill Krecklow, Finance & Administrative Services Manager, Transit Division, DOT

Recommendation	Agency Position	Schedule for Implementation	Comments
1. The Transit Division should develop performance measures and targets that reflect the efficiency and effectiveness in meeting the goal of planning and constructing reliable, safe, and convenient transportation services	Concur	While Transit internally reports a number of performance measures for the CIP, Transit needs a capital management and reporting system in order to ensure that consistent information is collected and reported. System development has been on-hold pending county-wide efforts to replace our existing financial systems. Transit has requested, and DES has agreed, to be part of the ABT effort evaluating the Oracle Project application.	
2. The Transit Division should develop guidelines and models for conducting economic analysis of capital projects and consistently follow those guidelines	Concur	Transit will review guidelines developed by WWTD and Roads and will have a draft set of guidelines in place by 2Q 2006.	
3. The Transit Division should develop a comprehensive facility master plan and designate a schedule for periodically updating the plan.	Concur	Transit has been working with OMB to define and develop the scope of work for a comprehensive facility master plan.	
4. Transit should consider using the state-mandated Asset Management Plan to document and communicate its asset management approach both internally and externally.	Concur	Transit will explore this possibility with representatives of State Department of Transportation prior to the next submittal.	
5. Transit should enhance its collecting and reporting of performance measures by: • Reducing the measures included in its business plan to those that are key indicators of its performance • Ensuring that its strategic goals focus on outcomes, rather than processes • Developing objectives that relate to the performance measures of revenue recovery and accurate forecasting • Developing performance measures to track how efficiently and effectively Transit pursues its goals of being an active regional partner and being an outstanding place to work.	Concur	Transit will work with the King County Executive's Office and the Office of Management and Budget to revise the reported performance measures. Transit will continue efforts to identify performance measures for goals 2 & 3. Transit's Mission and Goals are annually reviewed by the Regional Transit Committee and adopted by the King County Council.	
6. Transit should enhance the efficiency measures used in its peer review report by breaking down costs into labor and non-labor costs and by adjusting labor costs to reflect regional differences in average wages.	Concur	For the next peer report, Transit will review alternative ways to compare costs.	
7. Transit should include peer comparison information for buses only, in addition to its current practice of providing information that combines buses and trolleys.	Concur	For the next peer report, Transit will review alternative ways to compare costs.	